

Appn. No.: 10/501,047
Amendment Dated May 8, 2007
Reply to Office Action of February 8, 2007

JMYT-329US

Remarks/Arguments:

Claims 1-17 were pending in the application at the time of the Office Action. New claim 18 is added herewith, support for which can be found in the application in the sentence bridging pages 7 and 8. Claim 1 is amended to clarify that the ink includes particles consisting of graphite, i.e. no electrocatalyst is supported on those particles. Support for this amendment can be found throughout the application, and particularly in Examples 1 and 2.

The disclosure is objected to because of the absence of a brief description of the drawing. The examiner has also suggested the inclusion of section headings. These amendments are made herewith. No new matter has been added.

Claims 1-3, 6, 9 and 14-15 are rejected under 35 U.S.C. § 102(a) as anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, U.S. Pat. No. 6,528,201 to Hitomi. The Office Action states that Hitomi teaches the use of "particulate graphite (i.e. carbon black)." This conclusion is mistaken, because the word "graphite" is never used in Hitomi, and because "carbon black" (which Hitomi does use) is not graphite. Carbon black is defined as an amorphous form of carbon, graphite is defined as a crystallized form of carbon, and an amorphous material cannot be crystalline. Definitions of "carbon black" and "graphite," obtained online at the www.answers.com website, are as follows:

<http://www.answers.com/topic/carbon-black-1>

"An amorphous form of carbon produced commercially by thermal or oxidative decomposition of hydrocarbons and used principally in rubber goods, pigments, and printer's ink."

<http://www.answers.com/topic/graphite>

"A soft, steel-gray to black, hexagonally crystallized allotrope of carbon with a metallic luster and a greasy feel, used in lead pencils, lubricants, paints, and coatings, that is fabricated into a variety of forms such as molds, bricks, electrodes, crucibles, and rocket nozzles. Also called black lead, plumbago."

All of the instant claims recite the use of graphite, which Hitomi does not disclose or suggest. Thus, this claim element is not taught, and Hitomi is deficient as a single reference

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against the claims under either 35 U.S.C. § 102(a) or § 103(a). Accordingly, the rejection should be withdrawn.

Claims 4, 5, 7, 8, 10-13, and 16-17 are rejected under 35 U.S.C. § 103(a) as unpatentable over Hitomi as applied above, and further in view of Denton et al. (U.S. Pat. No. 5,716,437, "Denton"). However, Denton also fails to disclose or suggest the use of graphite. He does discuss the use of carbon particles as catalyst supports, but does nothing to suggest the use of graphite particles either as a support or for any other purpose. When Denton does provide details as to what type of catalyst support to use, he describes using "carbon black" (see Examples 3 and 4) or Cabot Vulcan® XC72R (Examples 1 and 2). Applicants include herewith a technical data sheet for that material, obtained from the www.cabot-corp.com website, indicating that this material is a carbon black. In sum, Denton does not disclose or suggest the use of graphite particles, and therefore does not overcome this deficiency of Hitomi. Accordingly, a *prima facie* case of obviousness has not been presented, and the rejection should be withdrawn.

Applicants also point out an apparent oversight in the Office Action in which PTFE (i.e., polytetrafluoroethylene) is incorrectly listed as a proton-conducting polymer.

Applicants invite the examiner to contact their undersigned representative, Frank Tise, if it appears that this may expedite examination.

Respectfully submitted,


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Frank P. Tise Reg. No. 50,379
Attorney and Agent for Applicants

CRL/FPT/gdb

Attachments: Cabot Vulcan XC72R data sheet

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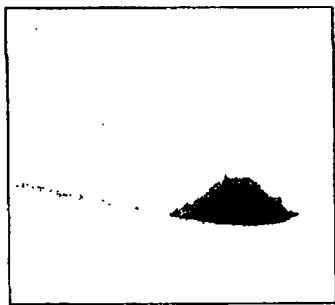
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on: May 8, 2007.

Gayle D. Bay

CARBON BLACK



VULCAN® XC72R



VULCAN XC72R carbon black is the industry standard with proven performance in applications requiring a degree of electrical conductivity.

Product Form: Fluffy

Performance Features

VULCAN XC72R carbon black provides excellent conductivity in a range of applications, delivering high conductivity at relatively low loading levels. Among the attributes for VULCAN XC72R are good chemical and physical cleanliness, good processability, as well as low sulfur content and ionic contamination. Compared to other conductive grades of carbon black, VULCAN XC72R is typically easier to disperse. In addition to conductivity, VULCAN XC72R will also allow a high level of jetness (blackness) to be obtained in the application.

Typical Applications

- Power Storage, Including Batteries and Fuel Cells
- Conductive Paper
- Conductive Liquid Dispersions
- As a Catalyst Support

Physical Form

VULCAN XC72R is a powdered carbon black having a typical bulk density of 6 lbs/ft³. It is also available in beaded form as VULCAN XC72.

MSDS

Material Safety Data Sheets are available from all Regional Sales Offices. The location of the nearest Sales Office can be found below.

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